



Installation, Operation & Maintenance Instructions

(IOM's) Model **J3-BSR**



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FUNCTION

The BSR (Battery 'Spring Return') system provides an alternative source of power to drive the **J3** actuator to a pre-set failsafe position in the event of a mains power failure. This is achieved by the use of internal rechargeable batteries which are constantly trickle charged during normal mains power operation thereby ensuring that the batteries always have maximum stored power available in the event of a mains power failure. Internal circuitry senses the incoming mains power. When mains power is available it is used to both trickle charge the batteries and run the motor, the actuator therefore operates as a normal power open, power close whilst mains power is available. The LED status light is continuously lit.

In the event of mains failure, the battery power is used immediately to send the actuator to the pre-set failsafe position -usually closed (normally closed) but can be open (normally open), if the actuator is not already in that position. **The **J3**'s torque limiter is disabled when battery power is being called for to ensure that the maximum possible torque is available to send the actuator to the failsafe position, should the valve be jammed when the BSR is activated, irreparable damage may be caused to the actuator's gearbox. Damage so caused is not covered by our warranty.**

The LED status light will flash once every 3 seconds for 3 minutes to advise the power has been cut. On resumption of mains power, conditional that the actuator control signal remained unchanged, the actuator will reset to the position it saw at the time of the mains power failure, and the LED status light will be continuously lit.

Note that the **J3-BSR** requires a 'rest' period following the operation under battery power to replace the charge in the batteries used for that operation. This re-charge time varies between actuator models and failure to observe these re-charge time will result in damage to the batteries and will affect future performance.

INSTALLATION *These instructions are issued if an approved J+J agent installs the BSR plug & play conversion kit, and supplement the standard on-off IOM's.*

All **J+J** electric actuators can be installed in any orientation, but the 'normal' position with the actuator vertical above the valve is preferred.

All electrical connections are made externally WITHOUT REMOVING THE ACTUATOR'S COVER. Removing the cover without our prior authorisation may invalidate the warranty. External wiring diagrams applied to the side of the actuator housing are provided. We recommend that only qualified electricians make the electrical connections as a matter of Health & Safety. Please note that irreparable damage caused by incorrect wiring invalidates the warranty.

The **J3-BSR** is configured to fail closed on mains failure (normally closed) as standard. It is possible to change this to fail open (normally open) - see separate instructions.

OPERATING INSTRUCTIONS

Standard operation 3 or 2 wire system (see over for wiring), mains power open, mains power close, fails to safe position on mains power failure.
Function as described above. LED status light flashes every few seconds for 3 minutes to advise the mains power has failed

Solenoid style operation The J3 BSR was not designed to be used as a solenoid (energise open, fail closed) but with care, can be, by following these guidelines:

2 Wire system, mains power energise (+ on pin 3, - on pin 2), de-energise fails safe using battery power

The **J3-BSR** can be configured to operate like a solenoid (energise open, fail close or vice versa) by using 2 wires to connect to the neutral and open contacts. Mains power will then power the actuator open (energised) and when the mains power is switched off (de-energised) the batteries will close the actuator (this applies for normally closed configuration, for normally open configuration the actuator will energise closed, fail open).

Utilising this method requires observation of the minimum re-charge times mentioned above -the energise time MUST exceed the minimum re-charge time to replace the energy used during battery operation.

*Note that during the de-energised cycle, the **J3**'s anti-condensation heater will be disabled. Damage caused by condensation is not covered by our warranty as we provide an anti-condensation heater as standard.*

The LED status light will be continuously lit when energised, and flash every 3 seconds for the first 3 minutes when de-energised.

Re-charge times Initial charge before being put into operation: 24 hours
After each battery operation, the following MINIMUM re-charge time MUST be observed
Damage caused to the battery by non-observance to these times invalidates the warranty.

J3 Model 20	8 hours	J3 Model 55	8 hours
J3 Model 35	8 hours	J3 Model 85	8 hours

MANUAL OVERRIDE

All **J3** actuators have a selectable manual override facility, operated by a selector lever which disengages the motor drive when moved from AUTO (Automatic operation) to MAN (Manual). When MAN is selected, the actuator will not operate electrically. The motor will run until a time-out stops the motor and the LED status light will blink twice to indicate the actuator is in 'manual'.

NEVER remove the selector lever retaining screw as this will allow the operating mechanism to become free and will cause irreparable damage to the actuator's gearbox. **Removing this screw will invalidate any warranty.**

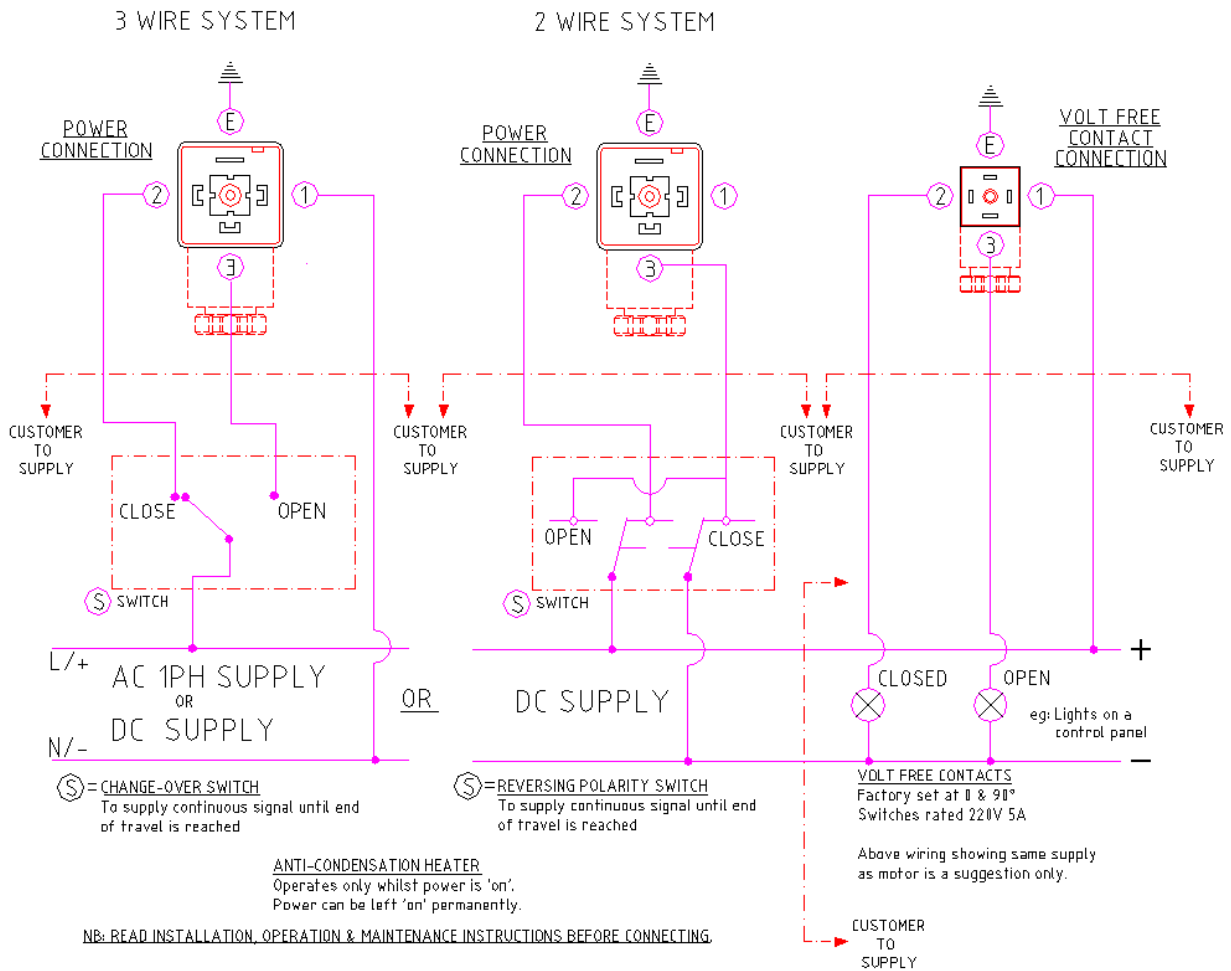
When in MAN mode, avoid rotating the actuator beyond the open and closed logos moulded on the top of the actuator. There are no mechanical stops fitted to the actuator (to allow rotations of 120 and 180 degrees) and it is therefore possible to over rotate the actuator. Over rotation will position the internal cams beyond their micro switches which will result in a first abnormal operation of the actuator when reset into AUTO mode (the actuator may rotate up to 540 degrees until the cam resets in the correct position).

When in AUTO mode, the manual override operating handle rotates on models 20 to 85 - restricting this rotation may activate the ETL and cause the LED status light to flash on-off. In these circumstances, send a reversing signal - the ETL will automatically reset and the LED will be continuously lit.

The open and closed logos moulded into the top cover look like this:



WIRING



MAINTENANCE

J3 actuators are designed to be maintenance free, the gearbox is factory lubricated for life and there are no internal parts that require maintenance.

DO NOT PRESSURE WASH. Pressure washing invalidates the warranty.